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A SUMMARY OF ENERGY RESOURCES

371 A computation is possible — admittedly a tentative and approximate one — of the total sum of energy, *i.e.*, fuel and power, which the captive area of Europe expects to possess at the end of its several long-rang plans — more or less, by the end of 1954 or beginning of 1955. Such a computation can be made in terms of coal, in accordance with the ratios of conversion used in the statistical calculations of the United Nations.[62]

Considering all the secondary sources of energy (coke, manufactured gas, synthetic oil, thermal electric energy) as proceeding from the primary sources of energy (coal, lignite, petroleum, natural gas, hydroelectricity), the tentative table of the total primary energy of the captive area can be represented by the following figures: -

Coal	133	million tons
Lignite	85	" " of coal equivalent
Petroleum	17.5	" " " " "
Natural Gas	6	" " " " "
Hydroelectricity	12	" " " " "
Total:	253.5	million tons of coal equivalent

These figures cannot, of course, be taken literally, since they are based on too many assumptions and arbitrary ratios of conversion, nor can they serve as a basis for any further computations. Their value lies in showing a student of the problem the proportions between the main components of the total sum of energy which the captive countries expect to possess as a basis for their industrial activity. Coal represents somewhat more than one half, lignite one third, and petroleum and natural gas not quite one tenth of that total energy. The table also permits the

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conclusion that more than one fifth of the total primary energy will by 1954-1955 be changed into electric power.[63] 371

Geographically speaking, the table shows that, in the domain of fuel and power, the Silesian-Ostravan coal basin represents about half the primary energy which the captive area expects to possess by 1954-1955, and far more than half the primary and secondary energy taken together. Very roughly speaking, Poland expects to produce by 1954-1955 about 40 percent of the total primary energy of the captive area, Eastern Germany more than 25 percent, Czechoslovakia about 20 percent, Rumania about 8 percent, and Hungary about 4 percent.[64]

It must be stressed once again that all these computations are highly approximate, and that they concern the *production* of fuel and power by the captive area and individual countries. The *consumption* of energy by the captive area and its components would be expressed by a quite different set of figures. Approximately one fourth of the coal produced in Poland and possibly more than half the petroleum produced by the area are being exported to Russia, Western Europe, and in lesser quantities to South America and the Middle East.[65] Some electric energy is sold by Western Germany to the Soviet zone,[66] and the Soviet Union will be supplying coke to Eastern Germany and possibly to Rumania. Also the figures for consumption of energy by the individual captive states would be quite different from the above-quoted national figures of production of energy. The computation of these figures lies outside the scope of the present study.

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AN APPRAISAL

● 371 FUEL and power are the basis of every industrial activity. Any increase in fuel and power production must of necessity be a rather slow business: new mines and electric plants, in particular those working on water power, cannot be built on short notice, and an increase in existing capacity is generally limited by technical conditions. Consequently, production of the overwhelming proportion of electric power in the captive area depends on the fuel available for the thermic plants producing the current. The Communist planners in the captive countries, constantly prodded by their Russian supervisers to produce more and more heavy industrial goods, have inaugurated very bold long-range economic plans which they themselves probably regard as not quite reachable. Irrespective of other material and human factors which influence and condition industrial production, such targets can be achieved only if sufficient fuel and power is produced by the captive area. If this essential premise fails, ambitious plans for machine building and chemical production will not be fulfilled.

Considered from this angle, the present level of fuel production — particularly of coal — in most of the captive area has not been very satisfactory ever since 1950, *i.e.*, since the initial stage of the several long-range economic plans. Apart from this apparently enduring insufficiency, a new reason for doubting that the fuel plans will be executed has arisen since the summer of 1951. The production of coal in the four central countries of the captive area (Czechoslovakia, Hungary, Poland, and Rumania) is directly threatened by a different sort of crisis, the first of its kind in this part of Europe since its submission to Soviet control. This is the acute shortage of foodstuffs. Both issues will be considered.

"The output of coal increased in 1950 by 5 percent in comparison with that of 1949. Industrial production as such increased by 30.8 percent in comparison with 1949. It follows that industry grows far more rapidly than the production of fuel. At the same time, railroad transportation increases more rapidly than the output of coal. The demand of the market for coal as domestic fuel is also increasing . . . in 1950, the consumption of domestic coal was nearly 3.5 times as large as prewar. . . . At the same time, the demand for coal for exportation remains unchanged. . . . In that situation, the problem of increasing the output of coal, of fulfilling and overfulfilling the plan, must become one of the central issues of our work in 1951." This quotation comes from a speech of Hilary Minc, the economic master of Poland, which he delivered in February 1951, to introduce the economic plan for 1951.[67] There is no doubt that these words apply equally well to Czechoslovakia and all the other captive countries.

Probably the best economic brain behind the Iron Curtain, Minc realizes very well the danger of the situation. In his speech he offered a number of remedies: new investments (*i.e.*, new mines), higher mechanization and increased efficiency in organization and labor. There is no doubt, again, that as long as the discrepancy between the supply of coal and the demand for it by industry and transport remains the only reason for worry by the Polish or any other satellite government, these measures, which are already being applied, can improve the performance of the mines and increase the output of coal. Statistics show that output has been increasing in Poland by about 4 million tons per annum (1948: 70 million tons; 1949: 74 million; 1950: 78 million tons). But this rate of increase appears to be insufficient. Unless it can be accelerated, the target of 100 million tons of coal by 1955 (in practice, by 1954) will not be achieved. Moreover, even if this goal should be achieved, the planned output would not cover the demand as described by Minc.

It is a fact that even if the Communist economy functions at an optimum "normal" level the efficiency of labor in coal mining

315 duction of oil is different: there is no guarantee that new investments will produce oil. On the eve of World War II, the Polish oil fields were regarded as being gradually exhausted: between 1900 and 1938 their annual production fell from some 4 million metric tons to 0.5 million. The production of the much richer Rumanian oil fields fell from a peak of 8.7 million tons in 1936 to 5.2 million tons in 1943, and the prevailing technical opinion was that they had passed their production peak. The point of departure of the current long-range plans is that the new oil fields in Albania, Czechoslovakia, and Hungary (and Austria as well) can be developed almost at will, and that the exhaustion of the oil fields in Rumania and Poland can be halted and that production can be stimulated. The satellite governments and the Soviet experts who manage most of the oil fields take for granted that they contain much untapped oil, and that it can and will be extracted. More effort than ever before is being expended in the search for new sources of oil and in full exploitation of the [185] existing wells. According to the Rumanian Five Year Plan about five million feet of new drilling will be made in 1955, while in the top production year of 1936 new drilling reached only one million feet.[81] According to the same plan Rumania will manufacture most of its own oil mining machinery and make the installations in its plants. Altogether the equivalent of 860 million dollars will be invested in the Rumanian oil industry in the course of the current plan.[82] As noted above, the oil production hitherto obtained does not seem to confirm such optimism, especially in view of the fact that since the summer of 1951 the situation in the Rumanian oil fields as well as in the others, has been much complicated by the food crisis.

● 371 To sum up: after consideration of all data pertaining to fuel and power production in the captive area of Europe, both actual and planned, the following conclusions can be made. If the satellite governments do not fundamentally revise their attitude towards labor, especially during the present food crisis, and unless rapid technical and organizational progress is attained in hard coal extraction, the coal shortage may develop into a bottle-

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neck which will seriously threaten the plans for other branches of heavy industry. Throughout the captive area, with the exception of Eastern Germany, this is a grave problem. Whether it can be solved is an open question. The prospect for lignite is satisfactory. On the other hand, it seems improbable that oil targets will be achieved, mainly because of the present situation in the Rumanian oil fields. The production of electric power projected in the several long-range plans can be achieved without much difficulty if based on lignite and low grade coal which cannot be used for other purposes; with difficulty if based upon high grade coal, the supply of which may be insufficient. If based on water power, the production of electric power will depend largely on the investment in new hydroelectric plants. 371

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1. It may be taken for granted that every effort will be made to fulfill the Eastern German, Polish, and Rumanian plans one year ahead of schedule, that is, by the end of 1954 or beginning of 1955.

2. It may be expected that, having fulfilled its plan for power by the end of 1951, Bulgaria will launch a new plan which may aim at an output of about one billion *kwh* more by the end of 1954 or the beginning of 1955 — an entirely justified supposition.

3. It is true that the output of 16.5 billion *kwh* which Czechoslovakia plans to reach in 1955 cannot be accepted as its target for 1954 or beginning of 1955, and a much lower figure should be taken instead.

4. But the larger Bulgarian and the lower Czechoslovakian figure may compensate one another, especially if a lower figure of the Hungarian output in 1954 (6,000 million *kwh* instead of 6,500 million) is accepted as the basis for the tentative computation.

Under the circumstances the writer regards the mere arithmetic sum of the six national targets, equivalent to more or less 82 billion *kwh*, as an entirely acceptable hypothesis: the margin of error should not exceed one billion *kwh*.

[60] Harry Schwartz, *New York Times*, 23 January 1951.

[61] Estimates of the writer.

371 [62] *Economic Survey of Europe in 1949*, United Nations, Geneva, 1950, p. 231.

[63] 82 billion *kwh* represent the equivalent of somewhat over 50 million tons of coal (1,590 *kwh* equivalent to one ton of coal, see footnote 62). This figure corresponds to a general figure for Europe; see p. 12 of the same *Survey*.

[64] Estimates of the writer.

[65] Silesian coal has been exported for generations, and trade in it flourished between the two World Wars. Industrial production and railroad transportation in the countries named depend to some extent on the specific technical quality of Polish coal.

[66] 800 million *kwh* from Hamburg and West Berlin, according to *Wirtschaftsrevue*, Karlsruhe, 15 December 1950. See also footnote 14.

371 [67] *Trybuna Ludu*, Warsaw, 1951, No. 53.

433 [68] *Statistical Yearbook of Poland*, 1939, p. 239; also *European Steel*
316 *Trends*, United Nations, Geneva, 1949, p. 51.

[69] Evaluation by Alfred Zauberman, *Dziennik Polski*, London, 1951.

[70] The production of the Donbas combines began in 1951 at the Piotrowice plant of heavy mining machinery in Poland (*Wirtschaft*, Berlin, 1951, No. 32) and in at least one of the corresponding plants in Czechoslovakia.

185 [71] *Trybuna Ludu*, Warsaw, 1951, No. 160.